

In response to that Office Action, please amend the above-identified application as follows:

IN THE CLAIMS

Please amend Claims 1, 10 and 17, and add new Claims 46-52 to read as follows. A marked up copy of Claims 1, 10 and 17, showing the changes made thereto, is appended.

~~1. (Amended) A printing head where an electrothermal transducer for generating thermal energy used for discharging ink and a driver for driving said electrothermal transducer are provided on a substrate, comprising:~~

~~a sensor which detects the condition of said substrate and outputs an analog signal; and~~

~~an A/D converter which converts the analog signal from said sensor into a digital value to be outputted to the outside of said printing head,~~

~~wherein said sensor and said A/D converter are provided on said substrate.~~

~~10. (Amended) A printing head substrate having a electrothermal transducer for generating thermal energy used~~

for discharging ink and a driver for driving said electrothermal transducer, comprising:

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a sensor which detects the condition of said substrate and outputs an analog signal; and

an A/D converter which converts the analog signal from said sensor into a digital value to be outputted to the outside of said printing head,

wherein said sensor and said A/D converter are provided on said substrate.

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17. (Amended) A printing head which performs printing by discharging ink in accordance with an ink-jet method, comprising:

a memory for storing information of said printing head;

a converter which converts an analog signal into digital signal and outputs the digital signal; and

a driver which drives said plurality of printing elements in accordance with an input print signal,

wherein the information is read from said memory by using a clock signal and a latch signal for inputting said print signal,

and wherein the digital signal is outputted from said converter by using said clock signal.

~~Sub B-1~~ --46. (New) A printing head where an electrothermal transducer for generating thermal energy used for discharging ink and a driver for driving said electrothermal transducer are provided on a substrate, comprising:

~~A~~ a sensor which detects the condition of said substrate and outputs an analog signal; and

an A/D converter which converts the analog signal from said sensor into a digital value, in order to output information on the condition of said substrate to the outside of said printing head as a digital value.


47. (New) The printing head according to claim 1, further including a current path for supplying current for driving said electrothermal transducer.

48. (New) The printing head substrate according to claim 10, further including a current path for supplying current for driving said electrothermal transducer.

~~Sub B-2~~ 49. (New) The printing head according to claim 46, further including a current path for supplying current for driving said electrothermal transducer.

50. (New) A printing apparatus which performs printing by using the printing head according to claim 46.

51. (New) A method for outputting information from a printing head, comprising the steps of:

 providing a printing head having a memory for storing information of the printing head, a converter which converts an analog signal into a digital signal and outputs the digital signal, and a driver which drives said plurality of printing elements in accordance with an input print signal;

reading the information from the memory by using a clock signal for inputting the print signal; and

outputting the digital signal from the converter by using the clock signal.

52. (New) A method for outputting information from a printing head comprising the steps of:

providing a printing head which performs printing in accordance with an input print signal, and having a nonvolatile memory for storing information on the condition of the printing head; and

outputting the information stored in the memory in a serial format to the outside of the printing head, by